

WHAT IS CLAIMED IS:

1. A bump structure, comprising:
a protruding part provided on an insulating layer that is composed of resin obtained by hardening a liquid material; and
a conductive layer that covers the protruding part,
the protruding part being obtained by forming a liquid-repelling part with a liquid-repelling characteristic for the liquid material, and a liquid-attracting part that is more wettable than the liquid-repelling part for the liquid material on an upper surface of the insulating layer, and then discharging the liquid material onto the liquid-attracting part and hardening the liquid material.
2. A bump structure, comprising:
a recessed part provided in a substrate;
a protruding part that is partially buried in the recessed part; and
a conductive layer that covers the protruding part,
a top part of the protruding part being at a higher position than a highest part of the recessed part.
3. The bump structure according to Claim 2, a shape of a base surface of the recessed part being generally circular, oval or rectangle.
4. The bump structure according to Claim 2, a maximum width of a cross-section of the protruding part being equal to a maximum width of the base surface of the recessed part.
5. A bump structure, comprising:
a protrusion that is provided on a substrate;
a protruding part that is provided on an upper surface of the protrusion; and
a conductive layer that covers the protruding part.
6. The bump structure according to Claim 5, a maximum width d_1 of a cross-section of the protruding part being larger than a maximum width d_2 of the upper surface of the protrusion.
7. The bump structure according to Claim 2, the substrate being composed of an insulating layer.
8. The bump structure according to Claim 2, the conductive layer being electrically coupled to an electrode connecting part.
9. A method of manufacturing a bump structure, comprising:

forming a liquid-repelling part with a liquid-repelling characteristic for droplets and a liquid-attracting part that is more wettable than the liquid-repelling part for the droplets on an upper surface of an insulating layer;

discharging the droplets onto the liquid-attracting part to form a protruding part precursor;

hardening the protruding part precursor by applying energy to form a protruding part; and

forming a conductive layer so as to cover the protruding part.

10. A method of manufacturing a bump structure, comprising:

forming a recessed part in a substrate;

discharging droplets onto a base surface of the recessed part to form a protruding part precursor;

applying energy to the protruding part precursor to harden the protruding part precursor and form a protruding part that is partially buried in the recessed part, with a top part of the protruding part being set at a higher position than a highest part of the recessed part; and

forming a conductive layer so as to cover the protruding part.

11. A method of manufacturing a bump structure, comprising:

forming a protrusion on a substrate;

discharging droplets onto an upper surface of the protrusion to form a protruding part precursor;

applying energy to the protruding part precursor to harden the protruding part precursor and form a protruding part; and

forming a conductive layer so as to cover the protruding part.

12. The method of manufacturing a bump structure according to Claim 11, a maximum width d_1 of a cross-section of the protruding part being larger than a maximum width d_2 of the upper surface of the protrusion.

13. The method of manufacturing a bump structure according to Claim 10, the substrate being composed of an insulating layer.

14. The method of manufacturing a bump structure according to Claim 9, before the protruding part precursor is formed, a liquid repelling treatment being carried out on a region adjacent to a region in which the protruding part precursor is formed.

15. The method of manufacturing a bump structure according to Claim 9, the droplets being discharged using an ink jet method.

16. The method of manufacturing a bump structure according to a Claim 9, the droplets including a precursor of either thermosetting resin or UV-hardening resin, and the energy being heat or UV rays.

17. A mounting structure of an IC chip and a circuit board, the IC chip and the circuit board being joined via the bump structure according to Claim 1, and the bump structure being formed on a surface of either the IC chip or the circuit board.

18. The mounting structure according to Claim 17, the circuit board being an insulating layer, a glass substrate or a glass-epoxy substrate.

19. The mounting structure according to Claim 17, a surface of the circuit board being protected by an insulator.

20. The mounting structure according to Claim 17, the circuit board being a flexible board.